region the break in the record represented by the conventional plane of separation between the upper and lower divisions of the series is here obliterated. . . . . The little fauna is the oldest yet described from Brazil."

That last remark reminds me that some three years ago I published in this journal (Vol. IV, p. 975) a notice of an article by Dr. F. Katzer upon "The oldest fossiliferous beds of the Amazon region." In that article Dr. Katzer claims to have found graptolites in rocks said to have come from the Rio Maecurú region. Since the appearance of that note my attention has been directed to the fact that the article in question contained neither names, descriptions, nor figures of such graptolites, and that the origin of the fossils he mentioned was not really known—omissions that I should have observed without assistance.

It is a matter of painful interest to observe the great gaps of time between the collecting of the fossils by the Geological Commission, the date of Dr. Clarke's papers, and the date on the title page of this belated volume of excellent work.

We are accustomed in this country to hear more or less complaint about delay in the publication of government reports. But in this instance we may see if we will how much worse such matters might be. These collections were made in 1876, were placed in Dr. Clarke's hands in 18(?), the paper on the Silurian fossils was finished by him in 1891, that upon the Devonian in 1892, and the publication appears toward the end of 1899—twenty-three years after the field-work!

The inconvenience of this sort of thing is perhaps not as serious in Brazil where comparatively little is doing in science as it might be here or in Europe, but, like all other wrongs, sooner or later the country must pay for them. J. C. BRANNER.

The Cretaceous of the Black Hills as Indicated by the Fossil Plants. By LESTER F. WARD, with the Collaboration of Walter P. Jenney, William M. Fontaine, and F. H. Knowlton. Extract from the Nineteenth Annual Report of the U. S. Geol. Survey, Part II. Washington, D. C., 1899.

The results recorded in this extract are the outgrowth of a series of investigations beginning with the discovery of cycads in the Black Hills in 1893. From a study of these fossils and of their stratigraphical position, Professor Ward reached the conclusion that a part of the

so-called Dakota formation of the Black Hills belongs to the Lower Cretaceous series. This conclusion, together with the observations which led up to it, he published in the JOURNAL OF GEOLOGY in the following year. Since that time the work of investigation has been greatly extended through the efforts of Professor Ward and his co-laborers, with the result that his former conclusion is now fully substantiated.

New fossil localities were found, and many new species were collected. Of the cycads, one hundred and twenty-six trunks and fragments were examined. These were collected from two general although widely separated areas. The collection contains twenty-one species, all of which are new to science. Fossil forests are mentioned as occurring at the same horizon.

Professor Jenney makes a report on the Hay Creek region, in which he finds: a marine Jura characterized by an abundant invertebrate fauna; a later Jura resting unconformably upon the former, and characterized by saurian bones and fossil wood; above this the Lower Cretaceous, which he subdivides as follows: (1) the Hay Creek formation; (2) the Barrett shales; (3) the Oak Creek beds. The series is characterized by an abundant flora which contains no cycads.

The flora of the region is described by Professor Fontaine, who finds a number of species common to the Potomac formation, and a few common to the Kootenai. This suggests a closer relation with the eastern flora, but Mr. Ward thinks that this may not be the actual condition, as the Kootenai flora has not been as thoroughly investigated as the Potomac.

A few outcrops of the "Atlantasaurus beds" are reported as occurring on the eastern flank of the Black Hills. These consist of clays representing a thickness of about fifty feet and containing bones of saurians. The beds are thought to have been laid down in the depressions of the eroded surface of the marine Jura. W. N. LOGAN.

The Geology and Physical Geography of Jamaica: Study of a Type of Antillean Development. By ROBERT T. HILL. Bulletin of the Museum of Comparative Zoölogy at Harvard College, Vol. XXXIV, 1899. pp. 256, 41 plates.

The general scope of this volume, which is an important addition to the work which the author has heretofore done on Antillean geology,